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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,374	09/18/2003	Eldad Zeira	I-2-0395.1US	8496

24374 7590 03/13/2006

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EXAMINER

PHUONG, DAI

ART UNIT	PAPER NUMBER
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2688

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/666,374		ZEIRA ET AL.	
	Examiner		Art Unit	
	Dai A. Phuong		2688	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-70 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/18/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The references listed in the Information Disclosure Statement filed on 01/26/2006, 12/01/2005, 02/05/2004 and 07/06/2004 have been considered by the examiner (see attached PTO-1449 form or PTO/SB/08A and 08B).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 10-15, 20-25, 30-35, 40-44 and 51-70 are rejected under 35 U.S.C. 102(b) as being anticipated by Okajima et al. (Pub. No: 20010018346).

Regarding claim 1, Okajima et al. disclose a method for receiving at least one desired communication signal in a wireless communication system, the method comprising: receiving a plurality of communication signals (fig. 3 and fig. 8, [0060], [0062] to [0068]); selecting communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one communication signal originating from another cell ([0062] to [0068]); producing a channel estimate for each selected communication signal ([0062] to [0068]); and jointly detecting data of the selected communication signals (fig. 3 and fig. 8, [0058], [0068] and [0096]).

Regarding claim 2, Okajima et al. disclose all the limitations in claim 1. Further, Okajima et al. disclose the method wherein the selecting of communication signals is based on a received power of each communication signal ([0062] to [0068]).

Regarding claim 3, Okajima et al. disclose all the limitations in claim 2. Further, Okajima et al. disclose the method wherein the selected communication signals have a received power exceeding a threshold ([0062] to [0068], [0088]).

Regarding claim 4, Okajima et al. disclose all the limitations in claim 2. Further, Okajima et al. disclose the method wherein the selected communication signals number a fixed value of N (fig. 3, [0062] to [0068]).

Regarding claim 5, Okajima et al. disclose all the limitations in claim 1. Further, Okajima et al. disclose the method wherein the selecting of communication signals is based on a received power of each communication signal per symbol ([0008], [0057]-[0058]).

Regarding claim 10, Okajima et al. disclose all the limitations in claim 1. Further, Okajima et al. disclose the method wherein at least one communication signal from another cell includes a communication signal transmitted from one wireless transmit/receive unit 42 and 43 for reception by another wireless transmit/receive unit 45 and 46 (fig. 3 and fig. 8, [0060], [0062] to [0068])

Regarding claim 11, this claim is rejected for the same reason as set forth in claim 1.

Regarding claim 12, this claim is rejected for the same reason as set forth in claim 2.

Regarding claim 13, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 14, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 15, this claim is rejected for the same reason as set forth in claim 5.

Regarding claim 20, this claim is rejected for the same reason as set forth in claim 10.

Regarding claim 21, Okajima et al. discloses a wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising: an antenna 45 and 46 receiving a plurality of communication signals (fig. 3 and fig. 8, [0060], [0062] to [0068]); a communication selection device selects communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one communication signal originating from another cell (fig. 3 and fig. 8, [0060], [0062] to [0068]); a multiple source channel estimation device and a channel estimate selector/combiner produces a channel estimate for each selected communication signal ([0062] to [0068]); and a joint detector jointly 47 detects data of the selected communication signals (fig. 3 and fig. 8, [0058], [0060], [0068] and [0096]).

Regarding claim 22, this claim is rejected for the same reason as set forth in claim 2.

Regarding claim 23, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 24, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 25, this claim is rejected for the same reason as set forth in claim 5.

Regarding claim 30, this claim is rejected for the same reason as set forth in claim 10.

Regarding claim 31, Okajima et al. discloses a base station for receiving at least one desired communication signal, the base station comprising: means for receiving a plurality of communication signals (fig. 3 and fig. 8, [0059]-[0075]); means for selecting communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one communication signal originating from

another cell (fig. 3 and fig. 8, [0059]-[0075]); means for producing a channel estimate for each selected communication signal (fig. 3 and fig. 8, [0059]-[0075]); and means for jointly detecting data of the selected communication signals (fig. 3 and fig. 8, [0059]-[0075]).

Regarding claim 32, this claim is rejected for the same reason as set forth in claim 2.

Regarding claim 33, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 34, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 35, this claim is rejected for the same reason as set forth in claim 5.

Regarding claim 40, Okajima et al. discloses a base station for receiving at least one desired communication signal, the base station comprising: an antenna 42 and 43 receiving a plurality of communication signals (fig. 3 and fig. 8, [0059]-[0075]); a communication selection device selects communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one communication signal originating from another cell (fig. 3 and fig. 8, [0059]-[0075]); a multiple source channel estimation device and a channel estimate selector/combiner produces a channel estimate for each selected communication signal (fig. 3 and fig. 8, [0059]-[0075]); and a joint detector jointly detects data of the selected communication signals (fig. 3 and fig. 8, [0059]-[0075]).

Regarding claim 41, this claim is rejected for the same reason as set forth in claim 2.

Regarding claim 42, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 43, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 44, this claim is rejected for the same reason as set forth in claim 5.

Regarding claim 51, Okajima et al. disclose a method for receiving at least one desired communication signal, the method comprising: providing a joint detector 47 capable of processing N communication signals (fig. 3 and fig. 8, [0062] to [0067]); receiving a plurality of communication signals (fig. 3 and fig. 8, [0062] to [0067]); selecting N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other communication signal having a highest received power level (fig. 3 and fig. 8, [0062] to [0067]); the selecting of the N communication signals evaluates communication signals of multiple cells (fig. 3 and fig. 8, [0062] to [0067]); and jointly detecting data of the N selected communication signals using the joint detector 47 (fig. 3 and fig. 8, [0062] to [0067]).

Regarding claim 52, Okajima et al. disclose all the limitations in claim 11. Further, Okajima et al. disclose the method wherein the selecting N communication signals includes all of the communication signals of a cell of the joint detector (fig. 3 and fig. 8, [0062] to [0067]).

Regarding claim 53, this claim is rejected for the same reason as set forth in claim 51.

Regarding claim 54, this claim is rejected for the same reason as set forth in claim 52.

Regarding claim 55, this claim is rejected for the same reason as set forth in claim 51.

Regarding claim 56, this claim is rejected for the same reason as set forth in claim 52.

Regarding claim 57, Okajima et al. disclose a base station for receiving at least one desired communication signal, the base station comprising: joint detecting 44 means capable of processing N communication signals (fig. 3 and fig. 8, [0062] to [0075]); means for receiving a plurality of communication signals (fig. 3 and fig. 8, [0062] to [0075]); means for selecting N communication signals of the plurality of communication signals, the selected N communication

signals including each desired communication signal and having other communication signal having a highest received power level (fig. 3 and fig. 8, [0062] to [0075]); the selecting of the N communication signals evaluates communication signals of multiple cells (fig. 3 and fig. 8, [0062] to [0075]); and the joint detecting means for joint detecting data of the N selected communication signals (fig. 3 and fig. 8, [0062] to [0075]).

Regarding claim 58, Okajima et al. disclose all the limitations in claim 57. Further, Okajima et al. disclose the method wherein the selecting N communication signals includes all of the communication signals of a cell of the joint detecting means (fig. 3 and fig. 8, [0062] to [0075]).

Regarding claim 59, this claim is rejected for the same reason as set forth in claim 57.

Regarding claim 60, this claim is rejected for the same reason as set forth in claim 58.

Regarding claim 61, this claim is rejected for the same reason as set forth in claim 54.

Regarding claim 62, this claim is rejected for the same reason as set forth in claim 54.

Regarding claim 63, this claim is rejected for the same reason as set forth in claim 54.

Regarding claim 64, this claim is rejected for the same reason as set forth in claim 59.

Regarding claim 65, this claim is rejected for the same reason as set forth in claim 59.

Regarding claim 66, Okajima et al. disclose method for receiving at least one desired communication signal, the method comprising: receiving a plurality of communication signals (fig. 3 and fig. 8, [0062] to [0080]); providing a communication selecting device for selecting communication signals, the communication selecting device selectively operates in a plurality of modes (fig. 3 and fig. 8, [0062] to [0080]), the modes including a first mode where only communication signals from a cell of the communication selecting device are selected (fig. 3 and

fig. 8, [0062] to [0080]) and a second mode where communication signals from multiple cells are potentially selected (fig. 3 and fig. 8, [0062] to [0080]); and jointly detecting data of the selected communication signals (fig. 3 and fig. 8, [0062] to [0080]).

Regarding claim 67, this claim is rejected for the same reason as set forth in claim 66.

Regarding claim 68, this claim is rejected for the same reason as set forth in claim 66.

Regarding claim 69, this claim is rejected for the same reason as set forth in claim 66.

Regarding claim 70, this claim is rejected for the same reason as set forth in claim 66.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 16, 26, 36, 45, 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okajima et al. (Pub. No: 20010018346) in view of Hasegawa (U.S. 5862476).

Regarding claim 6, Okajima et al. disclose all the limitations in claim 1. However, Okajima et al. do not disclose the method wherein the selecting of communication signals is based on a received power of each communication signal over a specified time period.

In the same field of endeavor, Hasegawa discloses the method wherein the selecting of communication signals is based on a received power of each communication signal over a specified time period (col. 15, lines 1-11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile station of Okajima et al. by specifically including the selecting of communication signals is based on a received power of each communication signal over a specified time period, as taught by Hasegawa, the motivation being in order to provide a good quality communication service.

Regarding claim 16, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 26, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 36, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 45, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 49, Okajima et al. disclose a wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising: an antenna 42 and 42 receiving a plurality of communication signals (fig. 3 and fig. 8, [0059]-[0075]); a plurality of blind code detection devices, each blind code detection devices for detecting codes used in a particular cell ([0008], (fig. 3 and fig. 8, [0056]-[0075])); a code selection device selects codes based on a result of each blind code detection device (fig. 3 and fig. 8, [0056]-[0075]); a channel estimate combiner 44 for producing estimated channel responses corresponding to the selected codes (fig. 3 and fig. 8, [0056]-[0075]); and a joint detector 44 having inputs configured to receive the selected codes and the produced estimated channel responses and detecting data of the selected communication signals (fig. 3 and fig. 8, [0056]-[0075]). However, Okajima et al. do not disclose a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cells transmissions.

In the same field of endeavor, Hasegawa discloses a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cells transmissions (fig. 1 and fig. 2, col. 1 line 30 to col. 2, line 16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile station of Okajima et al. by specifically including a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cells transmissions, as taught by Hasegawa, the motivation being in order to provide a good quality communication service.

Regarding claim 50, Okajima et al. disclose a base station for receiving at least one desired communication signal, the base station comprising: an antenna 42 and 43 receiving a plurality of communication signals (fig. 3 and fig. 8, [0059]-[0075]); a plurality of blind code detection devices, each blind code detection devices for detecting codes used in a particular cell, excluding a cell of the base station (fig. 3 and fig. 8, [0008], [0056]-[0075]); a code selection device selects codes based on a result of each blind code detection device and codes of a cell of the base station (fig. 3 and fig. 8, [0008], [0056]-[0075]); a channel estimate combiner for producing estimated channel responses corresponding to the selected codes (fig. 3 and fig. 8, [0008], [0056]-[0075]); and a joint detector 44 having inputs configured to receive the selected codes and the produced estimated channel responses and detecting data of the selected communication signals (fig. 3 and fig. 8, [0008], [0056]-[0075]). However, Okajima et al. do not disclose a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cells transmissions.

In the same field of endeavor, Hasegawa discloses a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cells transmissions (fig. 1 and fig. 2, col. 1 line 30 to col. 2, line 16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile station of Okajima et al. by specifically including a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cells transmissions, as taught by Hasegawa, the motivation being in order to provide a good quality communication service.

27-29
6. Claims 7-9, 17-19, 37-39, 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okajima et al. (Pub. No: 20010018346) in view of Hudson (Pub. No: 20020176485).

Regarding claim 7 Okajima et al. disclose all the limitations in claim 1. Further, Okajima et al. disclose the method wherein the wireless communication system is a time divided code division multiple access communication system ([0006]). However, Okajima et al. do not disclose the producing channel estimates is by implementing a Steiner algorithm for a plurality of cells.

In the same field of endeavor, Hudson discloses the producing channel estimates is by implementing a Steiner algorithm for a plurality of cells ([0006]-[0008] and [0040]-[0041] and 0051))

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile station of Okajima et al. by specifically including the producing channel estimates is by implementing a Steiner algorithm for a plurality of cells, as

taught by Hudson, the motivation being in order to allow adequate interference cancellation of intercell interference.

Regarding claim 8, the combination of Okajima et al. and Hudson disclose all the limitations in claim 7. Further, Okajima et al. disclose the method wherein the time divided code division multiple access communication system is a time division duplex wideband code division multiple access communication system (fig. 1, [0006] to [0008]).

Regarding claim 9, the combination of Okajima et al. and Hudson disclose all the limitations in claim 7. Further, Okajima et al. disclose the method wherein the time divided code division multiple access communication system is a time division synchronous code division multiple access communication system (fig. 1, [0006] to [0008]).

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 7.

Regarding claim 18, this claim is rejected for the same reason as set forth in claim 8.

Regarding claim 19, this claim is rejected for the same reason as set forth in claim 9.

Regarding claim 27, this claim is rejected for the same reason as set forth in claim 7.

Regarding claim 28, this claim is rejected for the same reason as set forth in claim 8.

Regarding claim 29, this claim is rejected for the same reason as set forth in claim 9.

Regarding claim 37, this claim is rejected for the same reason as set forth in claim 7.

Regarding claim 38, this claim is rejected for the same reason as set forth in claim 8.

Regarding claim 39, this claim is rejected for the same reason as set forth in claim 9.

Regarding claim 46, this claim is rejected for the same reason as set forth in claim 7.

Regarding claim 47, this claim is rejected for the same reason as set forth in claim 8.

Regarding claim 48, this claim is rejected for the same reason as set forth in claim 9.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Klas et al. (U.S. 643070) radiotelephone communications

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ramos Feliciano Eliseo can be reached on 571-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dai Phuong
AU: 2688
Date: 03-02-2006


ELISEO RAMOS-FELICIANO
PRIMARY EXAMINER